

# Thermal seizure induction

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 An abbreviated version of this protocol was published in eLIFE in Apr 2019

Disordered breathing in a mouse model of Dravet syndrome

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## Detailed protocol

### Febrile seizure assessment:

Animals were individually placed in an open-top Plexiglas container with walls high enough to prevent escape (~10 inches). We continuously monitored mouse body temperature using a Type T thermocouple rectal probe ([http://www.physitemp.com/animal-rectal-probes\\_p145](http://www.physitemp.com/animal-rectal-probes_p145)) connected to a feedback temperature controller and a heating lamp ([http://www.physitemp.com/anitempcont\\_p123](http://www.physitemp.com/anitempcont_p123)). The thermocouple was held in place by taping the wire to the animal's tail. The wire was long enough to allow the mouse to move freely throughout the container. The controller was able to maintain core body temperature at a command temperature  $\pm 0.3^{\circ}\text{C}$ . Mice will be held at  $37^{\circ}\text{C}$  (typical resting mouse body temperature; [http://www.informatics.jax.org/mgihome/other/mouse\\_facts1.shtml](http://www.informatics.jax.org/mgihome/other/mouse_facts1.shtml)) for 10 min before body temperature was increased by  $0.5^{\circ}\text{C}$  every 2 minutes by turning on a heat lamp positioned above the experimental cage until an observable seizure occurs or  $42^{\circ}\text{C}$  is reached. Note that the 2 minute clock started only after reaching command temperature. After which the heat lamp is shut off temperature probe removed and the animal sacrificed for [postmortem histology](#).

**How to cite:** (Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Mulkey, D. (2022). Thermal seizure induction. Bio-protocol Preprint. [bio-protocol.org/prep1671](https://bio-protocol.org/prep1671).
2. Kuo, F., Cleary, C. M., LoTurco, J. J., Chen, X. and Mulkey, D. K. (2019). Disordered breathing in a mouse model of Dravet syndrome. eLIFE. DOI: [10.7554/eLife.43387](https://doi.org/10.7554/eLife.43387)

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